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Sci-Tech Book News Reviews

Susan Fingerman

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The following section consists of 100 book reviews selected from *Sci-Tech Book News*, reprinted with the permission of Book News Inc. This review journal is published four times a year, each issue reviewing over 2,000 new titles in the physical and biological sciences, mathematics, engineering, computer science, technology, and agriculture. For a sample issue and subscription information, contact Book News Inc. at 5739 NE Sumner Street, Portland, OR 97218. Phone: (503)281-9230; Fax: (503)287-4485; E-mail: booknews@booknews.com.

GEOGRAPHY, HYDROLOGY, ENVIRONMENT

G70   2006-017908   978-1-58948-140-4
A to Z GIS; an illustrated dictionary of geographic information systems, 2d ed.
Title main entry. Ed. by Tasha Wade and Shelly Sommer.
ESRI Press, ©2006 268 p. $24.95 (pa)
This dictionary meant for students and professionals consists of terms relating to geographic information systems (GIS) and their use in research, field studies, and practical applications. Approximately 1,800 terms – general, not software-specific — are included, as well as color illustrations, and articles by other contributors about annotation and labels, features, geometry, layers in ArcGIS software, map projections and coordinate systems, remote sensing, and topology. Terms that describe concepts, processes, and operations, and those from related fields such as cartography, computing, geodesy, geography, GPS, and remote sensing, are included. Definitions incorporate subject area classifications. Wade is a project manager at ESRI and Sommer is a research specialist at ESRI.

G109   978-1-59693-016-2
Introduction to GPS; the Global Positioning System, 2d ed.
El-Rabbany, Ahmed. (The GNSS technology and applications series)
Artech House, ©2006 210 p. $69.00
Featuring over 90 illustrations, this resource for students and practitioners provides a concise overview of the Global Position System (GPS) and its applications. Without going into any advanced mathematics, El-Rabbany (Ryerson U., Toronto, Canada) describes the GPS system and its components and elucidates its signal structure. Other topics include measurement errors and biases; ambiguity resolution techniques; and integration with other satellite navigation systems. The second edition features a new chapter on GPS satellite orbit. The volume concludes with a list of useful Websites.

GB451   2005-015457   978-1-4051-3685-3
Global coastal change.
Valiela, Ivan.
Blackwell Publishing, ©2006   368 p. $89.95 (pa)
Valiela has been teaching and conducting research since 1969 in Woods Hole at the Boston U. Marine Program, Marine Biological Laboratory. He offers an overview of the environmental factors changing the marine systems of the world. Topics addressed include the global context of coastal change, atmospheric-driven changes, sea level rise, alteration of freshwater discharges, alteration of sediment transport, loss of coastal habitats, petroleum hydrocarbons, chlorinated hydrocarbons, metals, the introduction of exotic species, harvest of finfish and shellfish, eutrophication, and other agents of coastal change. The text is intended for interested lay readers, professional managers and decision makers, and researchers and students dealing with coastal matters. Illustrated in b&w.

GL798   978-1-59693-052-0
GNSS receivers for weak signals.
Ziedan, Nesreen I. (GNSS technology and applications series)
Artech House, ©2006 234 p. $95.00
Global navigational satellite systems (GNSSs) have a wide variety of applications, including positioning wireless devices, tracking during ionispheric scintillation, and determining the orbit of satellites, all of which involve weak signals. Ziedan (geomatics engineering, U. of Calgary and computer systems and engineering, Zagazig U., Egypt) examines weak signals and introduces new, more efficient receiver algorithms designed for weak signals and various dynamic conditions. He overviews GNSS principles and weak-signal processing and techniques, signal models, signal acquisition, fine acquisition, bit synchronization, data detection, code and carrier tracking, and navigation message decoding. He also offers a summary of the algorithms and their performance.

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MATH, COMPUTERS

HA29   2006-004930 1-4129-2481-2
**Statistics for people who (think they)
hate statistics, Excel ed.**
Salkind, Neil J.
Sage Publications, ©2007 403 p. $89.95
In this Excel edition of his popular text, Salkind
(psychology, research in education, University
of Kansas) provides tools students need to
use Excel along with basics of statistics for
a first or second course. Using an informal
writing style and humorous cartoons, he walks
students through the use of Excel for statistical
analyses and overviews analytical techniques.
Other reader-friendly features include top ten
lists, numerous tips and margin icons, and a
glossary. Coverage progresses correlations
and graphical representation of data through
inferential techniques and analysis of variance.
Real world examples, chapter summaries, and
exercises with worked solutions are included.

KF3133 2005-058157 978-1-57018-507-6
**Electronic and software patents; law
and practice, 2d ed.**
Title main entry. Ed. by Steven W. Lundberg.
BNA Books, ©2005 -- p. $425.00
The American Intellectual Property Law
Association's Electronic and Software Protection
Committee provides a broad guide for patent
prosecutors, patent litigators, general
practitioners, corporate executives, or corporate
counsel. Veteran patent attorneys from both
prosecution and litigation practices and corporate
and private practice update the 1995 first edition
with new chapters on patent filing trends for
software and business methods, maximizing
success with patent examiners, drafting a patent
specification that meets requirements outside of
the US, and post-*State Street Bank* court cases
involving business method patents.

QA75.5   978-0-7695-2666-9
Computer science; proceedings.
Mexican International Conference on Computer Science
(7th: 2006: San Luis Potosi, Mexico) Ed. by Sergio
Rajsbaum.
Computer Society Press, ©2006 221 p. $178.00
(pa)
These 25 papers from the September 2006
conference report research advances in image
processing, pervasive computing, software
engineering, robotics, human-computer
interaction, and evolutionary computing.
The contributors propose an adaptive node
refinement collocation method for partial
differential equations, enhanced management of

encrypted data in databases, a component library
for Matlab neural networks, and instantiation
semantics for message sequence charts. Other
topics include the mixed postman problem with
restrictions on the edges, real-time scheduling
of interrupt requests over conventional PC
hardware, multi-format web content transcoding
for mobile devices. No subject index is provided.

QA75.5 2006-921099 978-0-7695-2563-1
**Creating, connecting and collaborating
through computing; proceedings.**
Conference on Creating, Connecting and Collaborating
Through Computing (4th: 2006: Berkeley, CA) Ed. by
Hajime Kita et al.
Computer Society Press, ©2006 277 p. $185.00
(pa)
The 2006 C^5 conference brought together
researchers, developers, and end users
from around the world to consider recent
developments in the areas of creative and
collaborative computing and multimedia
authoring environments. The volume opens with
a description of a new 3D content browser based
on Croquet that has a TVML processing engine
and peer-to-peer connectivity. The remaining
35 papers discuss such topics as learning
in a distance and collaborative course that
connected Kyoto U. and UCLA; authorization-
based access control for the services oriented
architecture; and idioms for composing games
with EToys. The volume lacks a subject index.

QA76   978-0-471-99813-6
**Knowledge structures for
communications in human-computer
systems; general automata-based.**
Koenig, Eldo C.
Wiley-IEEE Press, ©2007 281 p. $55.00 (pa)
Koenig (computer science emeritus, U. of
Wisconsin-Madison) draws on his decades of
practical experience along with his 34 previously
published works in the field to create this
one-stop resource. He focuses on six features
required for communication in human-computer
systems (HCS): extracting and storing the
knowledge of sentences, knowledge association,
deductive process, inference, feedback and
sequencing of knowledge, illustrating how to
achieve each by using the General Automata
Method. He describes a general automaton in a
detailed analysis, then addresses the processing
of knowledge about automata, a general
system of interactive automata, processing of
knowledge about systems of automata, changing
expressions of knowledge for communication
from one form and style to another, and electronic
security through pseudo languages. The result

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is challenging but thorough, and Koenig makes sure the text is accessible by including helpful appendices with background information.

QA76.54   978-0-7695-2676-8
Embedded and real-time computing systems and applications; proceedings.
International Conference on Embedded and Real-Time Computing Systems and Applications (12th: 2006: Sydney, Australia)
Computer Society Press, ©2006 428 p. $194.00 (pa)
Fifty-seven papers from the August 2006 conference report recent developments in ubiquitous computing, timing analysis, resource management, embedded software, real-time communications, power aware computing, multiprocessor scheduling, real-time operating systems, and wireless sensor networks. Topics include instruction scheduling with release times and deadlines on ILP processors, data freshness and overload handling in embedded systems, relaxed correctness for firm real-time databases, and operating system support for procedural abstraction in embedded systems. No subject index is provided.

QA76.61 2006-006350 1-58488-643-9
Fundamentals of natural computing; basic concepts, algorithms, and applications.
De Castro, Leandro Nunes. (Chapman & Hall/CRC computer and information science series)
Chapman & Hall/CRC, ©2006 662 p. $89.95
De Castro (computer and electrical engineering, Catholic U. of Santos) describes combining patterns found in nature and typical computer behaviors to design a new and innovative generation of computers. Striving to be a complete guide, this includes theoretical material as well as practical instructions, right down to the code, integrating the basic concepts, algorithms and applications from a wide range of disciplines. He describe concepts ranging from parallelism and the ability to distribute to adaptation and reductionism, the ways in which computer design can be inspired by nature in evolutionary biology, evolutionary computing, or simulated annealing, neurocomputing with such techniques as neural networks, swarm intelligence, including swarm robotics, and immunocomputing, including artificial immune systems. Phenomena include fractals, cellular automata, L-systems, iterated function, fractional Brownian motion, and artificial life and closes with descriptions of new natural materials used in computing.

QA76.73   978-1-59693-008-7
Security for mobile networks and platforms.
Aissi, Selim et al. (Artech House universal personal communication series)
Artech House, ©2006 313 p. $109.00
Written by a security architect at Intel and two security experts working in Europe, this book describes hardware and software security approaches employed on mobile platforms, wireless protocols, and network security aspects of wireless area networks. After introducing authorization and cryptographic techniques, the authors explain communication stacks, web services, managed runtimes, certification schemes, the TLS protocol, IPsec, Bluetooth, and the IEEE 802.11 standard and countermeasures.

QA76.87 2006-007625 978-0-8493-3375-0
Neural networks for applied sciences and engineering; from fundamentals to complex pattern recognition.
Samarasinghe, Sandhya.
Auerbach Publications, ©2007 570 p. $99.95
Samarasinghe (natural resources engineering, Lincoln U., New Zealand) describes how neural networks are used to find patterns in scientific data. Beginning with the basics, she explains a variety of neural networks' internal workings, and how to apply them to solve real problems. Among the types are Multilayer Perceptron for predictions and classification, Self-Organizing Feature Maps for unsupervised clustering, and Recurrent Networks for understanding and forecasting time-series. Distributed in the US by Taylor and Francis.

QA76.9 2006-016095 978-0-470-01748-7
Grid networks; enabling grids with advanced communication technology.
Title main entry. Ed. by Franco Travostino et al.
John Wiley & Sons, ©2006 340 p. $100.00
Once network and Grid experts seemed to live on different planets, but now these advanced technologies have merged to their mutual benefit. The contributors, master practitioners and academics, cover both theory and practical issues including applications to a variety of Grid types, including those used in computation, data, service and instrumentation. They describe in detail the general attributes and types of Grids, including emergent communication technologies, Grid network requirements, driver applications, architecture, emerging architecture from standards bodies, service and service design, building on multiservice networks, middleware, TCP and UDP services and protocols, Layer 2 and Layer 3 technologies, monitoring and

fault detection, recovery and restoration, infrastructures, and future possibilities. Articles are very accessible and the illustrations are especially helpful. The result is comprehensive and serves well as a reference as well as a source of inspiration for further research.

QA76.9 2006-007942 0-7494-4748-6
International IT governance; an executive guide to ISO 17799/ ISO27001.
Calder, Alan and Steve Watkins.
Kogan Page Ltd., ©2006 366 p. $80.00 (pa)
The information-driven economy requires that business managers and executives understand how information security risks to their organizations are being treated by their information technology (IT) departments. Experts in the field address the critical role of IT governance (defined as "the system by which business corporations are directed and controlled"), relevant regulation (e.g., the Sarbanes-Oxley Act), and policy and practice specifics of meeting ISO/IEC 27001 as the new global standard of information security best practice available (superceding ISO/IEC 17799). The guide includes recommended websites and reading, and offers access to a supporting website with downloadable templates and a trial subscription to a digital update service.

QA268 2006-049639 978-1-58488-618-1
An introduction to cryptography, 2d ed.
Mollin, Richard A. (Discrete mathematics and its applications)
Chapman & Hall/CRC, ©2007 413 p. $79.95
According to the followers of Pythagorus, "numbers rule the universe," and the undergraduate readers for whom this text is written will agree. Updating his text with recent discoveries (such as an unconditional deterministic polynomial-time algorithm for primality testing), popular references and eight appendices on computer arithmetic, Mollin (mathematics, U. of Calgary) covers the mathematical basics (including primes, induction, primitive roots, complexity, and the work of Euler, Fermat, Wilson, Legendre and Jacobi) and the cryptography basics (including ciphers, modes of operations and attacks) and includes the design elements of DES and AES, public-key cryptography (including ElGamal and digital envelopes), primality testing, factoring (including Pollard's algorithms), electronic mail and Internet security (including firewalls and cookies), and leading-edge applications such as login and network security, viruses and other infections, smart cards, and biometrics.

Mollin also includes dozens of mini-biographies, including that of the aforesaid Pythagorus.

QA611 2006-046178 0-471-68755-3
Topology and its applications.
Basener, William F. (Pure and applied mathematics series)
Wiley-Interscience, ©2006 339 p. $90.00
With its ability to categorize and count objects using approximate qualitative information as opposed to exact values, thereby allowing researchers to better understand an array of diverse topics, topology appeals to a wide range of disciplines, including engineering as well as physical and biological sciences. Basener (mathematics and statistics, Rochester Institute of Technology) keeps this diversity in mind in this text for a first course in topology or geometric topology. Working from rigorous theorems and proofs, and offering a broad array of examples and applications he covers point set topology, combinatorial topology, differential topology, geometric topology and algebraic topology in chapters on continuity, compactness and connectedness, manifolds and complexes, homotopy and the winding number, fundamental group, and homology. The applications are fascinating, and include a simple example of chaos, the topology of the universe, vector fields on surfaces, order and emergent patterns in condensed matter physics and computing Betti numbers.

ASTRONOMY

QB456   0-939950-72-3
New views of the moon.
Title main entry. Ed. by Bradley L. Jolliff et al. (Reviews in mineralogy and geochemistry; v.60)
Mineralogical Soc. of America, ©2006 721 p. $45.00 (pa)
Large teams of scientists from around the world contribute to each of the long chapters on the lunar surface and space-moon interactions; the constitution and structure of the lunar interior; the thermal magmatic evolution of the moon; cratering history and lunar chronology; the development of the moon; and the earth-moon system, planetary science, and lessons learned.

QB529 2006-022105   978-0-87590-430-6
Solar eruptions and energetic particles.
Title main entry. Ed. by Natchimuthukonar Gopalswamy et al. (Geophysical monograph; 165)
American Geophysical Union, ©2006 385 p. $88.00
Recently coronal mass ejection (CME) and solar energetic particles (SEPs) have received a significant amount of study, thanks the

peculiarities of solar cycle 23 and to new orbiting and ground-based systems. Researchers were able to take measures of unprecedented sensitivity to test assumptions and refine models. The results here include the aforesaid ejection, including their initiation and relationship with flares; SEPs, including the source material for large events and observations of energy-dependent charge states; flares and energetic particles, including radiative diagnosis and particle acceleration in solar flares and escape into interplanetary space; CME-driven shocks and SEPs in the heliosphere, including radio bursts and SEP events; and space weather, including geoeffective CMEs and energy particles.

PHYSICS

QC278 2006-010332 978-0-19-857054-7
Experimental techniques for low-temperature measurements; cryostat design, material property, and superconductor critical-current testing.
Ekin, Jack W.
Oxford U. Press, ©2006 673 p. $119.50
Ekin (physics, National Institute of Standards and Technology) provides core information in a manner accessible enough to suit graduate students while meeting the needs of professionals, combining a textbook on cryostat design techniques with a data handbook 50 years in the making that provides materials property data for carrying out that design. On the topic of cryostat design and materials selection Ekin describes measurement cryostats an cooling methods, heat transfer at cryogenic temperatures, cryostat construction, wiring and connections, temperature measurement and control and properties of solids at low temperatures. He also describes sample holders and contacts for electrical and transport measurements and critic-current measurements and data analysis for superconductors. The data handbook is truly impressive and includes cryogenic properties and construction, heat transfer, cryogenic apparatus wiring, temperature measurement tables and controller tuning, properties of solids at low temperatures, specialized resistivity measurement methods, sample contacts and critical-current analysis parameters.

QC631 978-3-527-40529-9
High-frequency electrodynamics.
Katsenelenbaum, Boris Z.
Wiley-VCH, ©2006 329 p. $165.00
Katsenelenbaum (USSR Institute of Radio Engineering and Electronics/Russian Academy

of Sciences emeritus) is the first to develop the laws of formation and propagation of electronic waves from the concept of guided wave optics; this text should become the standard within the field of electronics. Combining classical concepts with the very new, Katsenelenbaum comes up with a startling range of applications within the design of modern telecommunications systems, including the newest antennas, waveguides and power transmission lines. He gently steps readers through the Maxwell equation, plane lines, closed waveguides, closed resonators, open lines, antenna theory, and diffraction on metallic and dielectric objects, and includes both general and complementary references.

CHEMISTRY

QD65 978-0-8493-0487-3
CRC handbook of chemistry and physics; a ready-reference book of chemical and physical data, 87th ed.
Lide, David R.
CRC / Taylor & Francis, ©2006 -- p. $139.95
HHHH Previous editions of this venerable reference are cited in *Books for College Libraries, 3d ed.* and *Guide to Reference Books*. This is the second edition to appear in a larger page size and new type font, for those who continue to find that digital formats do not necessarily preclude the usefulness of ink & paper (it's also available on CD-ROM and on the Web). Four heavily used tables have been substantially revised: physical constants of inorganic compounds, bond dissociation energies, table of the isotopes, and scientific abbreviations and symbols. Fourteen other tables have been updated, and a new table on specific enthalpies of solution of polymers and copolymers has been added. David R. Lide (former director, standard reference data, National Institute of Standards and Technology) continues as editor.

QD79 978-3-527-31377-8
HPLC made to measure; a practical handbook for optimization.
Title main entry. Ed. by Stavros Kromidas.
Wiley-VCH, ©2006 753 p. $150.00
The goal of Kromidas (founder, Novia GmbH, "an independent consulting company for analytical chemistry") in producing this monograph is to highlight the issue of optimization in high performance liquid chromatography (HPLC) from a range of different perspectives. After contributors discuss some of the fundamentals of optimization, Kromidas presents chapters discussing the characteristics of optimization

in individual HPLC modes, including RP-HPLC, normal- phase HPLC, gel-permeation and size-exclusion chromatography, affinity chromatography, and enantiomer separations. Three chapters on coupling techniques come next, followed by three more on computer-aided optimization. The volume concludes with case studies of liquid chromatography mass spectrometry coupling in proteomics, testing for robustness in RP-HPLC, a hardware solution for the separation of complex mixtures, and the use of multiple detection (ultraviolet, mass spectrometry, chemiluminescent nitrogen detection) in the characterization of libraries of newly synthesized substances.

QD115   3-527-31317-6
Diffraction and spectroscopic methods in electrochemistry.
Title main entry. Ed. by Richard C. Alkire et al. (Advances in electrochemical science and engineering; v.9)
Wiley-VCH, ©2006 427 p. $190.00
Featuring balanced coverage of theory and applications, this resource for chemists, physicists, materials scientists, and engineers surveys recent advances in *in-situ* diffraction and spectroscopic methods in electrochemistry. The first of ten chapters by leading academics and researchers describes an application of the X-ray diffraction technique to the study of the structure-reactivity relationship in electrocatalysis. Other topics include (for example) UV-visible reflectance spectroscopy of thin organic films at electrode surfaces, and tip-enhanced Raman spectroscopy (TERS). Each chapter concludes with a discussion of possibilities for further research. Editor Alkire is affiliated with the Department of Chemical Engineering at the U. of Illinois, Urbana.

QD381 2005-056860 0-8493-9361-2
CRC handbook of enthalpy data of polymer-solvent systems.
Wohlfarth, Christian.
CRC / Taylor & Francis, ©2006 623 p. $269.95
Knowledge of thermodynamic data of polymer solutions is essential for an understanding of the molecular nature of mixtures and various industrial and laboratory processes. Introducing this text as one that fills a vacuum in data books and databases detailing enthalpy changes (i.e., the sum of a system's internal energy plus the energy associated with work done by the system) in polymer solutions, (Wohlfarth (physical chemistry, Martin Luther U., Halle-Wittenberg, Germany) covers all the necessary bases for

researchers and engineers who work in this field. Appendices route the reader to datasets on polymers and solvents. The text supplements the *CRC Handbook of Thermodynamic Data of Copolymer Solutions* and related CRC handbooks.

QD506 2005-017738 978-1-4051-2696-0
Chemistry and technology of surfactants.
Title main entry. Ed. by Richard J. Farn.
Blackwell Publishing, ©2006 315 p. $199.99
Contributors mostly from chemical companies, but also universities and regulatory agencies provide a broad guide to the manufacture, chemistry, and uses of surface active agents. Writing particularly for new chemists and chemical engineers, but also for more experienced hands who are encountering surfactants for the first time, they cover what surfactants are, the basic theory, the applied theory, anionic and non-ionic surfactants, other types, and relevant regulations in various countries. Manufacturers are also listed.

BIOLOGY

QH75 2006-001707 978-1-4051-2145-3
Conservation and the genetics of populations.
Allendorf, Frederick W. and Gordon Luikart.
Blackwell Publishing, ©2007 642 p. $84.95 (pa)
Allendorf and Luikart (both U. of Montana) explain how to apply the concepts and tools of genetics to problems in conservation, providing a foundation and a few examples rather than trying to review the extensive literature. They speak primarily to trained biologists and to graduate and advanced undergraduate students in biological sciences or resource management who have a basic understanding of ecology and genetics.

QH212   978-3-527-31269-6
Scanning probe microscopies, beyond imaging; manipulation of molecules and nanostructures.
Title main entry. Ed. by Paolo Smaorì.
Wiley-VCH, ©2006 544 p. $190.00
Chemists, materials scientists, and physicists explore how scanning tunneling microscopy and atomic force microscopy can be used not just to look at the details of surfaces and interfaces, but also to manipulate their characteristics. They concentrate on soft materials comprising organic, supramolecular, polymeric, and biological architectures adsorbed on inorganic and metallic surfaces. Their topics include nanoscale structural, mechanical, and electrical properties; patterning; bond strength and tracking

chemical reactions; and theoretical approaches.

in all areas of psychology and neuroscience.

BOTANY

QK898 2006-041207 1-58829-635-0
Plant proteomics; methods and protocols.
Title main entry. Ed. by Hervé Thiellement et al. (Methods in molecular biology; 355)
Humana Press Inc., ©2007 399 p. $125.00
These 29 articles describe the most up-to-date methods of researchers in plant proteomics, concentrating not only on standard procedures such as two-dimensional gel electrophoresis but also on improvements such as immobilized pH gradients (IPG). Many of the papers cover tricky procedures and include phenol extraction of proteins from recalcitrant plant tissues, protein extraction from a variety of materials including woody plants, cereal seeds, xylem and phloem sap, isolation of chloroplast proteins or plant mitochondria, plant plasma membrane protein extraction and solubilization, detergents and chaotropes for protein solubilization, visible and florescent staining for two-dimensional gels, quantitative analysis of two-dimensional gels, protein identification using nano liquid chromotography and tandem mass spectrometry, identification of phosphorylated proteins, glycosylation, multivariate data analysis, electroelution of intact proteins from certain gels and their subsequent analysis, generation of plant protein microarrays and investigation of antigen-antibody interactions, and phosporylation studies using plant protein microarrays.

ZOOLOGY

QL785 2005-051558 978-0-19-516765-8
Comparative cognition; experimental explorations of animal intelligence.
Title main entry. Ed. by Edward A. Wasserman and Thomas R. Zentall.
Oxford U. Press, ©2006 704 p. $120.00
Seventy-two international academics and researchers contribute to a text celebrating comparative cognition's first quarter century with a state-of-the-art collection of essays covering the broad realm of the scientific study of animal intelligence. Thirty-three chapters are organized into ten sections covering perception and illusion, attention and search, memory processes, spatial cognition, timing and counting, conceptualization and categorization, pattern learning, tool fabrication and use, problem solving and behavioral flexibility, and social cognition processes. For students and professional researchers

ANATOMY, PHYSIOLOGY

QM451 2006-041749 0-470-04000-9
Digital neuroanatomy. (CD-ROM included)
Leichnetz, George R.
Wiley-Liss, ©2006 92 p. $69.95 (pa)
Leichnetz (anatomy and neurobiology, Virginia Commonwealth U.) presents an introduction to neuroanatomy that is supplemented by an interactive CD containing approximately 300 images. The book presents information taught in first-year medical neuroscience courses and is meant for advanced undergraduate and graduate, first year medical and dental, and pharmacy and physical therapy courses. Topics covered are light-microscopic neurohistology; electron-microscopic neurohistology; the skull, meninges, and spinal cord; gross and sectional anatomy of the brain; and an introduction to brain imaging and MRIs. B&w images are also incorporated in the text. Self-grading quizzes are included on the CD.

QP514 2006-012747 978-0-470-09065-7
Chemical biology; applications and techniques.
Title main entry. Ed. by Banafshé Larijani et al.
John Wiley & Sons, ©2006 258 p. $65.00 (pa)
Written by an international team of researchers and academics, this text introduces 13 chemical and physical techniques used in chemical biology research and discusses their corresponding biomedical applications. Techniques covered include (for example) cryo-electron microscopy, PET imaging, optical tweezers, and chemical genetics. The volume, which features a section of full-color illustrations, is aimed at advanced students and pharmaceutical researchers who posses a basic understanding of the physical sciences. Editor Larijani is affiliated with Cancer Research, UK.

QP519 2006-043900 978-0-471-72184-0
Principles of mass spectrometry applied to biomolecules.
Title main entry. Ed. by Julia Laskin and Chava Lifshitz. (Wiley-Interscience series in mass spectrometry)
Wiley-Interscience, ©2006 687 p. $150.00
This work reviews the basic principles of mass spectrometry as they relate to the life sciences, with special focus on the inherent challenges posed by varying degrees of biomolecular size and flexibility. Contributors from academia and industry describe recent advances in the field and discuss challenges associated with analysis of

biomolecules using mass spectrometry. Chapters are grouped in three sections on structures and dynamics of gas-phase biomolecules; activation, dissociation, and reactivity; and thermochemistry and energetics. The book will be of interest to researchers and scientists. Laskin is a researcher in the private sector. Lifshitz taught chemistry at The Hebrew University, Israel.

QP531   978-3-527-31305-1
Concepts and models in bioinorganic chemistry.
Title main entry. Ed. by Heintz-Bernhard Kraatz and Nils Metzler-Nolte.
Wiley-VCH, ©2006 443 p. $70.00 (pa)
Focusing on the role of model systems in bioinorganic chemistry, Kraatz (inorganic chemistry, U. of Saskatchewan) and Metzler-Nolte (bioinorganic chemistry, U. of Bochum) and their expert contributors feature concepts such as electron transfer, medical inorganic chemistry, bioorganometallics and metal DNA complexes as well as inorganic model chemistry on metallo-enzymes, organized by metal ion. Topics of the ten papers include the biodistribution of metal ions, medicinal inorganic chemistry, the chemical toxicology of metals and metalloids, charge transport in biological molecules, bioorganometallic chemistry, interactions with metal ions, the bioorganic side of nucleic acid chemistry, nuclease and peptidase models, metalloporphyrins and metalloporphyrinoids, model complexes for enzymes containing vanadium, model complexes for enzymes containing molydbenum and tungsten, structural and functional models for oxygen-activated nonheme iron enzymes, model chemistry of iron-sulfur protein active sites and model complexes of enzymes containing nickel. Each paper includes references.

MEDICINE (GENERAL & PUBLIC ASPECTS)

R729 2006-020119 0-8058-4885-1
Handbook of human factors and ergonomics in health care and patient safety.
Title main entry. Ed. by Pascale Carayon. (Human factors and ergonomics)
Lawrence Erlbaum, ©2007 995 p. $295.00
This handbook contains 51 chapters compiled by Carayon (U. of Wisconsin, Madison) on the prevention of medical errors—concepts and methods of human factors and ergonomics and the applications for improving quality, safety, efficiency, and effectiveness in patient care. Other objectives of the volume are to reduce the cost of health care as well as stress

and workload. Authors are from academia, the health care industry, and governmental agencies and are practitioners of Human Factors Engineering in Denmark, France, Germany, Japan, the Netherlands, the UK, and the US. Sections cover macroergonomics and systems; job and organizational design, including stress and burnout; physical ergonomics; technology, robotics, and computer interaction; human error; methodologies, such as cognitive work analysis and video analysis; interventions; and applications in the emergency department, pediatrics, home care, nursing homes, and primary care. The book is intended for healthcare and human factors professionals and patient safety specialists, as well as undergraduate and graduate courses in nursing and other fields. Both subject and author indexes are supplied.

R858 2005-9308 31 1-58603-549-5
Connecting medical informatics and bio-informatics; proceedings.
International Congress on Medical Informatics (19th: 2005: Geneva, Switzerland) Ed. by Rolf Engelbrecht et al. (Studies in health technology and informatics; v.116.)
IOS Press, ©2005 1032 p. $192.00
The theme of the 19th Medical Informatics Europe Conference, held in August 2005, was "Connecting Medical Informatics and Bio-Informatics," emphasizing the convergence of these disciplines and reflecting the growing co-operation of different disciplines in healthcare. The editors of these proceedings (specialists in medical informatics at Germany's GSF National Research Center for Environment and Health, Switzerland's U. Hospitals of Geneva, and Romania's U. of Medicine and Pharmacy) present 169 peer-reviewed papers from the conference, organizing them into sections on bioinformatics and medical genomics; computerized patient records; decision support and clinical guidelines; educational technologies and methodologies; handheld and wireless computing; healthcare networks; imaging informatics; implementation and evaluation of clinical systems; terminologies, ontologies, standards, and knowledge engineering; natural language, text mining, and information retrieval; online health information and patient empowerment; organization change and information needs; and public health informatics and clinical trials.

HEALTH, MEDICINE, PSYCHIATRY

RA440 2006-000963 978-1-4051-3512-2
Qualitative research in health care, 3d ed.
Title main entry. Ed. by Catherine Pope and Nicholas Mays.
Blackwell Publishing, ©2006 156 p. $34.95 (pa)
With new material on the ethics and quality of qualitative research, advice on using different types of research, and information on the emerging field of research synthesis, this edition has been thoroughly updated to reflect recent developments. The 13 essays, which function as chapters, address qualitative interviews, focus groups, observational methods, conversation analysis, case studies, analysis of qualitative data, action research and consensus development. Each topic includes lists of references and further reading.

RA792 2005-057773 978-0-470-01484-4
Statistical methods in spatial epidemiology, 2d ed.
Lawson, Andrew B. (Wiley series in probability and statistics)
John Wiley & Sons, ©2006 398 p. $130.00
Lawson (epidemiology and biostatistics, University of South Carolina) covers the analysis and application of spatial statistical methods. In Part I, he introduces basic definitions and terminology, along with map construction and some basic models. In Part II, he applies this knowledge to fundamental problems of spatial epidemiology, such as disease mapping, ecological analysis, and space-time analysis. The book includes numerous data sets, each representing a different approach to analysis. This second edition offers a new emphasis on bioterrorism and disease surveillance. The audience for the book includes medical statisticians as well as researchers and practitioners from public health and epidemiology. The book is also suitable for graduate students of statistics and epidemiology, and for professionals working in government agencies.

PATHOLOGY

RB153 2006-006130 978-1-55581-376-5
Exposure; a guide to sources of infections.
Stürchler, Dieter.
ASM Press, ©2006 894 p. $109.95 (pa)
Stürchler (Basel U., Switzerland) designed this volume for clinicians, public health professionals, epidemiologists, and clinical microbiologists working to identify infectious disease agents and to create exposure histories for individuals with regard to human contact, animal contact, the natural environment, food, and travel. Under these categories, specific sources of exposure are listed (e.g. milk and dairy products); information regarding the source is then subdivided by agent classifications. The information generally includes statistics on populations, conditions, and climates where exposure has been prevalent. There is separate coverage of exposure risk in different animal types, human domiciles and living conditions, and types of work. Additional chapters provide clinical information on nosocomical infections, and an encyclopedic listing of infectious agents. Also included are a table reviewing the taxonomy of many human-infecting and some animal-infecting agents, an exposure checklist, a glossary, and a list of acronyms used in the text. An extensive bibliography is provided as well.

INTERNAL MEDICINE, PSYCHIATRY

RC150 978-1-85315-698-4
Influenza; human and avian, 2d ed.
Jennings, Roy and Robert C. Read.
Royal Society of Medicine Pr., ©2006 76 p. $38.00 (pa)
Writing for medical practitioners working either in the general community or in practices based on an industry or company, Jennings and Read (both: infection and immunity, U. of Sheffield) review the biological characteristics of the influenza viruses, the epidemiological and immune mechanism that have important roles in the pathogenesis of influenza infection, clinical features in different population groups, the current state of vaccines and new anti-influenza drugs, and managing influenza in general practice. The first edition was published in 2002. This work is distributed in the US by BookMasters.

RC553 2006-00065 3 1-59385-311-4
Imitation and the social mind; autism and typical development.
Title main entry. Ed. by Sally J. Rogers and Justin H. G. Williams.
Guilford Pr., ©2006 466 p. $65.00
Rogers (psychiatry and behavioral sciences, University of California- Davis) and Williams (child psychiatry, University of Aberdeen, Scotland) gather research from a range of disciplines examining the role of imitation in both typical infant and child development and in autism. Work on the range of imitative behaviors focuses on the effects of imitation on language development, parent-child and

peer relations, and learning. Chapters on the neural underpinnings of imitation and the links between imitation, autism, and related neurodevelopmental disabilities reveal implications for understanding and helping those with autism. The book is for graduate students and professionals in psychology, psychiatry, neuroscience, and education.

RC569 2005-034001   978-0-19-517249-2
Psychology of terrorism.
Title main entry. Ed. by Bruce Bongar et al.
Oxford U. Press, ©2007 492 p. $69.50
Presented by Bongar (psychology, Stanford U. School of Medicine), Brown (psychiatry and behavioral medicine, U. of South Florida), Beutler (psychology, Stanford U. School of Medicine), Breckenridge (associate director, Stanford Center for Interdisciplinary Policy, Research, and Education on Terrorism), and Zimbardo (emeritus, psychology, Stanford U.), 28 chapters explore a range of psychological issues related to the phenomenon of terrorism. After opening chapters lay out the general outlines of the field, the contributions are organize into four sections that explore psychological explanations for different types of terrorism, psychological consequences of terrorism, issues of assessment and treatment for different populations affected by terrorism, and prevention and psychological problems in reactions to terrorism.

RC683 2006-0094 99 1-58829-776-4
The art and science of cardiac physical examination. (with heart sounds and pulse wave forms on CD)
Ranganathan, Narasimhan et al. (Contemporary cardiology)
Humana Press Inc., ©2006 413 p. $99.50
Seeing the lack of training in cardiac auscultation, Ranganathan, Sivaciyan (U. of Toronto and St. Joseph's Health Centre, Toronto, Canada), and Saksena (Northwestern U. School of Medicine) describe cardiac physical examination techniques and skills. The volume covers—similar to their course at the U. of Toronto—arterial pulse, blood pressure measurement, jugular venous pulse, precordial pulsations, heart sounds, murmurs, elements of auscultation, pathophysiology, and local and systemic manifestations of cardiovascular disease. The accompanying CD contains about 140 clinical examples from real patients, with recordings of heart sounds and murmurs displayed on an oscilloscope, as well as videos of pulsations from patients with lesions, and echocardiographic images. The volume is meant for students, cardiologists, internists,

primary care physicians, anesthesiologists, and residents in internal medicine and cardiology.

RC801 2005-049767   978-1-4160-0245-1
Sleisenger and Fordtran's gastrointestinal and liver disease; pathophysiology, diagnosis, management, 8th ed; 2v.
Title main entry. Ed. by Mark Feldman et al.
Elsevier Saunders, ©2006 1540 p. $279.00
Now in its eighth edition (the seventh was published in 2002; the first was published in 1973), this two-volume set continues as a state-of-the-art, definitive reference that holds to high editorial standards for both content and readability. The organization remains essentially the same, but one-third of the contributing authors are new to this edition, thus keeping the content current and authoritative. Virtually all endoscopic and histologic figures are now in color and are integrated with the text; and diagrams and algorithms have been redrawn for uniformity and visual appeal. Dr. Sleisenger ceded the principal editor's seat for this edition, but continues as consulting editor; the brunt of the editorial work fell to Mark Feldman, Lawrence S. Friedman, and Lawrence J. Brandt (respectively: Presbyterian Hospital of Dallas, Newton-Wellesley Hospital, and Albert Einstein College of Medicine, among other affiliations).

SURGERY

RD594 2005-046723 0-86577-920-1
Atlas of neurosurgical techniques; brain.
Sekhar, Laligam N. and Richard G. Fessler.
Thieme Medical Publishers, ©2006 1074 p. $349.95
This extensive atlas of neurosurgical techniques focuses on how to manage diseases and disorders of the brain. The 900 illustrations accompany discussions of aneurysms, arteriovenous malformations, tumors, lesions, epilepsy and functional brain disorder, trauma, hydrocephalus, infections, stereotactic radiosurgery, and minimally invasive surgery. Sekhar (neurological surgery, U. of Washington, and cerebrovascular surgery, Harborview Medical Center, Seattle) and Fessler (neurosurgery, U. of Chicago Hospitals) compile 91 chapters, which cover indications, approaches, alternatives, anesthesia, surgical procedures, complications, and postoperative care, written by an international group of surgeons. The book serves as a companion volume to *Atlas of Neurosurgical Techniques: Spine and Peripheral Nerves.*

PEDIATRICS

RJ503 2006-023171 0-8058-6075-4
The clinical assessment of children and adolescents; a practitioner's handbook.
Title main entry. Ed. by Steven R. Smith and Leonard Handler.
Lawrence Erlbaum, ©2007   628 p. $95.00 (pa)
Aimed at graduate students and psychologists, this handbook presents guidelines for conducting clinical assessments of children and adolescents. Each of 31 chapters features a comprehensive case study illustrating the practical implications of a particular method, diagnosis, or clinical issue. The final section is devoted to assessment in special populations, such as children with autism and adolescents who are members of ethnic minorities. Smith teaches clinical psychology at the U. of California, Santa Barbara, and Handler directs the U. of Tennessee's Clinical Training Program.

TECHNOLOGY (GENERAL)

T10 2005-028764 0-8031-3370-7
Preparing and delivering technical presentations.
Budinski, Kenneth G. (Manual; 54)
ASTM International, ©2005   58 p. $19.00 (pa)
Written by a practicing engineer, this handbook guides students, technologists, engineers, and scientists through the process of preparing for and delivering an oral technical presentation. Both formal and informal presentations (including common meeting situations) are addressed. Seven chapters cover each step, from researching a subject through selecting visual aids, protecting intellectual property, and delivering the message. The volume is based upon communication tutorials that Budinski presented to co-workers at Eastman Kodak.

T11 2006-006478 978-1-4129-0561-9
Composing qualitative research, 2d ed.
Golden-Biddle, Karen and Karen Locke.
Sage Publications, ©2007   136 p. $32.95 (pa)
For professionals and students in the social sciences and management, Golden-Biddle (U. of Alberta) and Locke (College of William and Mary) explain how to transform fieldwork experience of qualitative research into journal articles. They explore such questions as what to write about, what aspects of the data to focus on, constructing a compelling argument, reducing the information into a journal-sized article, and depicting the

actual complexity of life that occurred in the organization. No date is noted for the first edition.

T59 2005-033742 978-0-8493-7029-8
The ergonomics kit for general industry, 2d ed.
MacLeod, Dan.
CRC / Taylor & Francis, ©2006 350 p. $69.95 (pa)
This kit provides businesses with everything they need to make their employees sit up straight and work pain-free. The kit provides practical advice about identifying and implementing low-cost improvements and includes worksheets, checklists, planning guides, employee feedback forms, a program audit and other materials to make the process effective. This second edition includes new material on problem-solving, many examples of simple, low cost approaches, and electronic copies of forms, worksheets, a PowerPoint presentation and a guide for conducting basic training sessions.

T174   978-0-415-32493-9
Universities, innovation and the economy.
Smith, Helen Lawton. (Routledge studies in business organizations and networks)
Routledge, ©2006 265 p. $145.00
Noting that successful universities "are often a defining characteristic of successful places," Smith (School of Management and Organizational Psychology, U. of London, UK) explores the territorial role of the university in science- and engineering-based industrial innovation and economic development. She is particularly concerned with unraveling the complexities of the relationship so that it can be understood which policy interventions are most likely to encourage the knowledge economy. Universities as a part of innovation systems in continental Europe are discussed in a relatively general way, while the UK, France, and the US receive more detailed attention through case studies comparing policy interventions, local dynamics, and institutional strategies in the British city of Oxford and the French city of Grenoble and similarly comparative discussion of the American Universities of Stanford, Louisville, and Princeton.

T385 2006-041662 978-1-56881-266-3
Real-time volume graphics.
Engel, Klaus et al.
AK Peters Ltd., ©2006 497 p. $64.00
Volume rendering techniques were originally developed for medical and scientific imaging; the results of an MRI or a seismograph are volume-rendered graphics produced from

3D scalar data. The techniques allow for the absorption, reflection, scattering and emission of light within an image—useful in medicine but also useful in the simulation of smoke, fire, clouds, and similar effects. This text covering theory and practice is intended not only for medical imaging specialists, but also for scientists, engineers, game developers, visual artists, animators, and anyone working with computer graphics. It can be used in an introductory course as well as for self study. The 17 chapters discuss theoretical background and basic approaches, GPU programming and GPU-based volume rendering, transfer functions, local and global volume illumination, ray casting, segmented volume data and large volume data, and non-photorealistic and illustrative techniques, among other topics. Algorithms for specific tasks are included throughout the book, written in C++ with OpenGL as the graphics API and Cg as the shading language.

ENGINEERING (GENERAL, CIVIL)

TA190 2005-035109 0-470-00723-0
The entrepreneurial engineer; personal, interpersonal, and organizational skills for engineers in a world of opportunity.
Goldberg, David E.
Wiley-Interscience, ©2006 208 p. $39.95
This text helps current and aspiring engineers develop the non- technical skills they need in order to be professionally successful throughout their careers. Goldberg (entrepreneurial engineering, U. of Illinois at Urbana-Champaign) describes ten key competencies that will enable engineers to better navigate a world in which the lines between technology and business have diminished or disappeared. Sample topics include writing a personal mission statement, making effective presentations, working as part of a team, and assessing technological opportunities.

TA335 2006-045439 1-58488-401-0
Numerical methods for engineers, 2d ed.
Griffiths, D. V. and I. M. Smith.
Chapman & Hall/CRC, ©2006 479 p. $79.95
No date is noted for the first edition of the textbook, but the second uses the newest version of the programming language Fortran 95 to introduce numerical methods in linear algebraic, non-linear, eigenvalue, and ordinary and partial differential equations. Interpolation and curve fitting and numerical integration are also covered. Programs are set out in the text.

TA347 2006-045012 978-0-89871-614-6
Understanding and implementing the finite element method.
Gockenbach, Mark S.
SIAM, ©2006 363 p. $87.00 (pa)
The finite element method is the most popular general-purpose technique for computing accurate solutions to partial differential equations. This textbook for advanced undergraduate and beginning graduate students in mathematics, engineering, and the physical sciences explains the theory underlying the method and discusses its applications for equilibrium problems. Particular attention is paid to the practical details of programming the algorithms, and MATLAB codes are available for download from a companion Website.

TA355 2005-054945 978-0-8493-3420-7
Engineering vibrations.
Bottega, William J.
CRC / Taylor & Francis, ©2006 726 p. $109.95
Bottega (mechanical and aerospace engineering, Rutgers U.) balances physics/mechanics and mathematics in this wide-ranging resource for students and professionals working on mechanical and structural vibration. With illustrations, examples and case studies supplementing the text, Bottega starts with an overview of basic principles, including equivalent systems, springs in parallel and in series, elementary dynamics and complex numbers, then moves to free vibration of single degree of freedom systems, forces vibration of single degree of freedom systems in both periodic and non-periodic excitations, operational methods, dynamics of multi-degree of freedom systems, free vibration of multi-degree of freedom systems, forced vibration of multi-degree of freedom systems, dynamics of one-dimensional continua, free vibration of one-dimensional continua, and forced vibration of one-dimensional continua. Each topic includes a bibliography and exercises.

TA405 978-1-55899-886-5
Materials in extreme environments; proceedings.
Symposium on Materials in Extreme Environments (2006: San Francisco, CA) Ed. by Daryush ILA et al. (MRS symposium proceedings; v.929)
Materials Research Society, ©2006 213 p. $104.00
The 27 papers examine fundamental properties and the response of materials in such extremes as static and dynamic high pressure, high strain and high strain rates, high radiation and electromagnetic fields, high and low temperatures,

corrosive environments, and atomic oxygen. Among the behavior and responses are crack branching, structural transition to super-protonic phase under high pressure, tensile and optical properties of the Hubble telescope's insulation, and nanostructure evolution. As a general rule, these sorts of things are to be avoided, but in some cases, extreme environments are used to produce desired properties.

TA418 2006-275580 3-527-31381-8
Biofunctionalization of nanomaterials.
Title main entry. Ed. by Challa S. S. R. Kumar.
(Nanotechnologies for the life sciences; 1)
Wiley-VCH, ©2005 366 p. $190.00
In the first volume of the publisher's new series "Nanotechnologies for the life sciences," Kumar (Center for Advanced Microstructures and Devices, Louisiana State University) et al. review the latest advances in efforts to create biocompatible nanomaterials. Recent research studies shed light on areas such as biofunctionalization of various types of materials, including fluorescent nanoparticles, carbon nanotubes, magnetic nanoparticles, gelatin nanoparticles, and microarrays. Other topics include conjugation of nanomaterials with proteins, and folate-linked limpid-based nanoparticles for tumor-targeted gene therapy. Readership for the book includes scientists working in medicine, biology, chemistry, materials science, physics, and engineering. The series is intended to provide the underlying science behind the design and implementation of medical, biological, and cybernetic applications in nanotechnology.

TA418 978-3-527-31296-2
Functional coatings by polymer microencapsulation.
Title main entry. Ed. by Swapan Kumar Ghosh.
Wiley-VCH, ©2006 357 p. $150.00
Chemists from Europe, China, and India review the current state of the practice as it has been informed by recent developments in polymer science and inorganic chemistry, especially at the nanoscale level. Their topics include the layer-by-layer assembly technique microencapsulating liquid active agents, smart textiles, and the sol-gel technique.

TA418 978-1-55899-871-1
Nanostructured materials and hybrid composites for gas sensors and biomedical applications; proceedings.
Symposium on Nanostructured Materials and Hybrid Composites for Gas Sensors... (2006: San Francisco, CA)
Ed. by Elisabetta Comini et al.
Materials Research Society, ©2006 287 p. $114.00
An April 2006 symposium brought together scientists from the fields of materials science and biotechnology to review the state of the art, remaining challenges, and future research directions in nano- bio-materials synthesis and their applications as biochemical detectors. Papers from the symposium, collected here, document recent developments in the areas of hybrid materials synthesis, nanowire properties, and organic and inorganic-based detector devices. Some topics examined are silicon microchannel arrays for biosensor devices, thermal stability of supported noble metal nanoclusters, and fabrication of electrospun tungsten oxide nanofibers. Editor Comini is affiliated with the University of Brescia, Italy.

TA418 2006-044557 1-57444-719-X
Self-organization during friction; advanced surface-engineered materials and systems design.
Title main entry. Ed. by German S. Fox-Rabinovich and George E. Totten. (Materials engineering; 31)
CRC / Taylor & Francis, ©2007 458 p. $139.95
Researchers from Europe, North America, and Japan concentrate on the self-organizing phenomenon, physico-chemical aspects of friction, and using advanced materials and surface-engineering techniques to control friction. They combine the fundamentals of thermodynamics and nano-tribological and other methods of material characterization, with studies of tribological behavior in a wide range of materials, to offer a novel approach to developing a new generation of surface-engineered self-adaptive materials.

TA455 978-0-87849-411-8
Electroceramics in Japan IX; proceedings.
International Electronic Division Meeting of the Ceramic Society of Japan (25th: 2005: Tokyo, Japan) Ed. by Keiichi Katayama et al. (Key engineering materials; v.320: CSJ series; v.15)
Trans Tech Publications, ©2006 286 p. $182.00 (pa)
Papers from an October 2005 meeting shed light on current Japanese research in the science and technology of electroceramics in Japan. Major

topics covered at the meeting include dielectrics, piezoelectrics, ferroelectrics, semiconductors, magnetic thin films, batteries and cells, memory devices, and optical devices. Some specific paper topics include powder and dielectric characterization of hydrothermally synthesized barium titanate nanopowders, a technique for permittivity measurement of ceramic powders at microwave frequencies, evaluation of characteristics of composite electromagnetic wave absorbers, and a new method to absorb dye molecules for dye-sensitized solar cells.

TA462   978-0-87170-709-3
ASM handbook; v.13C: Corrosion; environments and industries.
Title main entry. (Series: title)
ASM International, ©2006 1137 p. $220.00
This is the third and final volume of a three-volume update, revision, and expansion of *Metals Handbook*, 9th edition, vol. 13, *Corrosion*, published in 1987. The three volumes together present the current state of corrosion knowledge, describe efforts to mitigate corrosion on structures, and provide a perspective on future trends in corrosion prevention and mitigation. This volume is organized into two sections addressing the performance of materials in specific classes of environments, including freshwater, marine, and underground environments, and their performance in the environments created by specific industries, such as nuclear power, fossil energy and alternative fuels, petroleum and petrochemicals, defense, pharmaceuticals and medical technology, land transportation, commercial aviation, and the pulp and paper industries.

TA654   1-84564-175-2
Structures under shock and impact; proceedings.
International Conference on Structures Under Shock and Impact (9th: 2006: New Forest, England) Ed. by N. Jones et al. (WIT transactions on the built environment; v.87)
WIT Press, ©2006 570 p. $335.00
The 53 papers cover impact and blast loading characteristics, material response to high rate loading, missile penetration and explosion, protecting structures from blast loads, the behavior of structural concrete, correlation between computational and experimental results, energy absorbing issues, structural crash-worthiness, structural serviceability under impact loading, and seismic engineering applications. None of them address the World Trade Center explicitly, though mention is made of how that collapse has boosted interest in the

field. The US office of WIT Press is Computational Mechanics. There is no subject index.

TA656 2005-031812 0-7918-0242-6
Design of hazardous mechanical structures, systems and components for extreme loads.
Stevenson, John D. and Ovidiu Coman.
ASME, ©2006 296 p. $125.00
For structural-mechanical engineers, this volume examines the safe design of mechanical structures, systems, and components in hazardous facilities so that they can withstand extreme loads, both those that are man-induced or those resulting from external natural phenomena. It includes first order definition of the loads and analysis procedures for nuclear, petrochemical, and biomedical facilities. Coverage encompasses design classifications and safety goals, risk- based and risk-informed SSC Design Basis, generalized load phenomena, and the design acceptance criteria of the American Society of Mechanical Engineers and others. Other topics discussed are earthquake design and natural hazard phenomena, external blast and high energy system SSC rupture loads, the vibration response of fluid distribution systems, buried tunnels, vaults, and piping, and quality assurance and control.

TA1520 2006-044469 0-8493-4026-8
Applied microphotonics.
Jamroz, Wes R. et al.
CRC / Taylor & Francis, ©2006 403 p. $139.95
The electron will one day make way for the photon, and researchers are struggling to find the materials, topologies, and fabrication technologies at optimum speed and minimum cost. The authors, all practitioners, describe the historical perspective behind the technology, including photonic computing, photonic-band-gap structures and quantum photonics, technology growth and the market push, fundamentals of interactions of light with matter, the photonic node, transmitters, couplers and switches, multiplexers, receivers, amplifiers and compensators, new technologies, materials, fabrication and integration, advanced microphotonic devices, quantum photonic systems and future systems and their applications. Illustrations are clear and helpful and the authors include references for further reading.

TA1632   0-7695-2521-0
Pattern recognition; proceedings; 4v.
International Conference on Pattern Recognition (18th: 2006: Hong Kong). Ed. by Y.Y. Tang et al.
Computer Society Press, ©2006   4759 p. $730.00 (pa)
Representing a monumental editorial and reviewing effort by scientists across many disciplines and cultures, who sorted through 2,000 submissions, 311 papers were selected for oral presentation and 857 for posters (up from last year's 625 posters) at the 18th International Conference on Pattern Recognition (ICPR) (August 2006, Hong Kong), sponsored by the International Association for Pattern Recognition. Four hefty volumes contain the material arranged in sections under the broad themes of computer vision and image analysis; basic technologies; signal, speech and image processing; systems, robotics and applications in biometrics; and cognitive approaches and soft computing. The papers deal with very particular topics in an incredibly wide range of arenas, for example: semantic understanding of continued and recursive human activities, face recognition using patch-based spin images, high-quality textures generation, reconstruction for plane mirror reflection, data-intensive astronomy, machine learning for video compression, Mandarin emotional speech recognition, detection of virulent cells of *Cryptococcus neoformans* yeast, to name just a few. Indexing is by author, but not by subject.

TA1637   978-0-7695-2686-7
Computer graphics and image processing; proceedings.
Brazilian Symposium on Computer Graphics and Image Processing (19th: 2006: Manaus, AM, Brazil) Ed. by Manuel Menezes de Oliveira Neto et al.
Computer Society Press, ©2006 374 p. $201.00 (pa)
Papers from an October 2006 symposium detail the latest work in the areas of 3D photography, segmentation, animation and collision detection, medical images, and interactive computer graphics, as well as meshes and compression, tracking, statistical image analysis, visualization, mathematical morphology, and video analysis. Some specific topics explored include procedural glyphs for audio files, a Euclidean homotopic skeleton based on critical kernels, and detection of unusual motion using computer vision. In the near future, a special issue of the *Journal of Mathematical Imaging and Vision* will appear with extended versions of the best image processing and computer vision papers from the symposium. Similar arrangements

are being made for a special issue of a journal with the symposium's best computer graphics papers. There is no subject index.

HYDRAULIC ENGINEERING

TC812   1-84564-043-8
Sustainable irrigation management, technologies and policies.
Title main entry. Ed. by G. Lorenzini and C.A. Brebbia. (WIT transactions on ecology and the environment; v.96)
WIT Press, ©2006 390 p. $240.00
These papers from the proceedings from the conference of the same name held September 2006 in Bologna, Italy cover the management of increasingly scarce water resources, scientific and technical aspects of irrigation, and matters relating to national and international policies and economics. Papers include irrigation controls in situ, systems and planning in such areas as China and salty California, irrigation modeling, including hydraulic systems and subsurface irrigation, and irrigation management in such areas as Spain, Australia, South Africa and the Rio Grande. Examples include systems using low quality water and the retrieval of eroded areas. The US office of WIT Press is Computational Mechanics.

ENVIRONMENTAL TECHNOLOGY

TD223 2006-013257 978-1-59370-069-0
Securing our water supply; protecting a vulnerable resource.
Kroll, Dan J.
PennWell Books, ©2006 238 p. $79.00
Kroll, chief scientist for a company that studies water supply vulnerabilities, addresses general concerns related to protecting all types of water facilities and equipment from terrorist threats. After introductory chapters on the psychology of terrorism and a history of attacks on water supplies, he covers physical and plant security, cybersecurity, water monitoring, responding to an event, and legal liabilities for water utilities and protections under the Safety Act. B&w photos of various facilities are included. Appendices provide incident reporting forms, and list chemical and biological agents of concern and types of equipment for enhancing physical security.

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BUILDING CONSTRUCTION

TH9116 2005-921454 0-87765-712-2
NFPA's illustrated dictionary of fire protection terms.
Title main entry. Ed. by David R. Hague.
Natl. Fire Protection Assn., ©2005 440 p. $79.50 (pa)
Written by professionals who are active in the field, this reference provides clear definitions of 5,500 technical and legal terms found in hundreds of widely adopted NFPA codes and standards. The code from which each definition was taken is identified at the end of the entry. Many definitions are accompanied by b&w photos or diagrams. The volume also features a complete list of titles of all NFPA Official Documents through the June 2005 Meeting.

MECHANICAL ENGINEERING & MACHINERY

TJ151 2006-274930 0-8269-3454-4
Technical reference handbook, 5th ed.
Rasis, E.P.
American Technical Publishers, ©2006 298 p. $36.00
The venerable reference presents quick information on the fundamentals of mathematics, units of measurement, machine tool technology, mechanics, strengths of materials, machine elements, and geometric dimensioning and tolerancing as they relate to industrial and technical applications. Formulas, illustrations, charts, and tables are part of the mix. A new chapter on geometric dimensioning and tolerancing overviews the symbols and practices set out in ANSI-ASME Standard Y14.5M.

TJ163 2005-034875 978-1-84407-243-9
A handbook on low-energy buildings and district-energy systems; fundamentals, techniques and examples.
Title main entry. Ed. by L. D. Danny Harvey.
Earthscan Publications Ltd., ©2006 701 p. $275.00
Harvey (geography, U. of Toronto) draws on his quarter-century of computer climate modelling and analyzing energy scenarios, and help from colleagues in many disciplines and countries, to alert architects and engineers to the potential for dramatically reducing the energy use of new buildings compared to current conventional practice, and for reducing the energy use of existing building through renovation and retrofits. He systematically goes through all uses of energy in a building, showing how to reduce energy use by a factor of two or three without compromising comfort or services. Distributed in the US by Stylus.

ELECTRICAL ENGINEERING, ELECTRONICS, NUCLEAR ENGINEERING

TK454 2006-050353 1-59693-096-9
Problem solving in electromagnetics, microwave circuit, and antenna design for communications engineering.
Warnick, Karl F. and Peter Russer. (Artech House antennas and propagation library)
Artech House, ©2006 360 p. $109.00
Warnick (electrical and computer engineering, Brigham Young U.) and Russer (high-frequency engineering, Technical U. Munich) present a collection of problems and solutions in electromagnetic field theory and its applications for use in graduate and upper-level undergraduate courses, or as a reference for experienced engineers. The early chapters deal with fundamental field theory topics such as electromagnetic sources, Maxwell's equation, and static and quasi-static analysis. On this foundation, the later chapters discuss such topics as waveguides and transmission lines, antenna analysis, and numerical methods.

TK5101 2006-022505 0-321-42761-0
Telecommunications essentials; the complete global source, 2d ed.
Goleniewski, Lillian.
Addison-Wesley, ©2007 865 p. $49.99 (pa)
This guide serves as a reference to telecommunications technologies, covering terminology and issues, infrastructures, and new developments and applications. Beginning with the basics, the volume reviews technology fundamentals, traditional transmission media, communication channels, and the PSTN, then describes data communications and networking, the new generation of networks, and wireless communications. This edition addresses new developments in next-generation networks, IP networks and services, and optical networking, and contains new sections on IP telephony, VPNs, NGN architectures, broadband access alternatives, and broadband wireless applications. It includes a 100-page glossary. Goleniewski, who works for a company that provides education, information, and advisory services in telecommunications technologies, also lectures internationally.

TK5102   977-5945-37-2
Advances in nonlinear signal and image processing.
Title main entry. Ed. by Stephen Marshall and Giovanni L. Sicuranza. (EURASIP book series on signal processing and communications; v.6)
Hindawi Publishing Corporation, ©2006   361 p. $119.95
Sicuranza and Marshall, affiliated, respectively, with the University of Trieste, Italy and the University of Strathclyde, UK present work on emerging theories and techniques in nonlinear signal and image processing, including recent theoretical contributions in digital filtering as well as applications in areas such as genomics, speech analysis and synthesis, communication systems, active noise control, and strategies for handling multivalued data. Each chapter has a common structure, with an introduction briefly describing the state of the art in the area discussed, an explanation of the advantages of using a nonlinear approach, a demonstration of new methods and results, and a summary. Color and b&w images are included. The book is intended as a reference for graduate students and practitioners working on modern signal processing applications.

TK5102 2006-042318 0-8194-6092-3
Local approximation techniques in signal and image processing.
Katkovnik, Vladimir et al.
SPIE, ©2006 553 p. $92.00
Well-stocked with images including inverse radon transform filtering and tomography, this comprehensive text for advanced students and professionals explains a wide variety of signal processing techniques developed to restore signals from noisy and degraded observations, with signals acquired from still or video cameras, electron microscopes, and x-ray or ultrasound devices. Here the authors explain the process of extracting useful information from images, called "signal recognition," and detail a recent and original approach to it based on combining local polynomial approximation (LPA) and the "intersection of confidence interval" rule. Topics include discrete LPA, shift-invariant LPA kernels, integral LPA, discrete LPA accuracy, adaptive-scale selection, anisotropic LPA and LPA-ICI algorithms, nonlinear methods, likelihood and quasi-likelihood, photon imaging, and multi-resolution analysis, with applications in entertainment, medicine, business, industry, the military, science and security.

TK5103 2005-051362 978-0-471-74244-9
Cognitive radio architecture; the engineering foundations of radio XML. (CD-ROM included)
Mitola, Joseph.
Wiley-Interscience, ©2006 473 p. $99.95
Mitola, a consulting scientist and pioneer in the field, here offers the first full-length book dedicated to cognitive radio, a field which integrates computational intelligence and software-define radio for embedded intelligent agents that adapt to RF environments and user needs. Mitola asserts the technology is ready and gives a technical overview of the capabilities, then describes the process of evolving from aware and adaptive to cognitive radio, autonomous machine learning for AACR, and cognitive radio architecture. He then describes radio-domain competence with use cases, radio knowledge, and implementation of radio-domain skills, while user-domain competence topics include cases, knowledge, implementing skills and semantic radio.

TK5103 2006-050454 1-59693-028-4
Laser space communications.
Aviv, David. (Artech House space technology and applications series)
Artech House, ©2006 194 p. $99.00
Having worked 25 years in radar and laser communications development for private companies, Aviv says that laser communication technology provides privacy and interconnectivity with little power demand, compact size, low weight, and no requirement for an assigned frequency. He describes the engineering aspects of laser space communications systems that allow electrical engineers to design laser data links in a variety of environments.

TK5105 2006-017743 0-13-227267-9
Ajax; creating Web pages with asynchronous JavaScript and XML.
Woychowsky, Edmond. (Bruce Perens' open source series)
Prentice Hall, ©2006 384 p. $44.99 (pa)
It is powerful, it is open source software, and it works. Ajax has become the tool of choice for many developers using asynchronous JavScript and XML, and master developer Woychowsky uses extensive code examples and primers on key technologies and builds from the ground up so everyone from novices and experts will find this useful. He covers the types of web pages, the basics of Ajax, HTML/XHTML, JavaScript, Ajax using HTML and JavaScript, XML, XMLHttpRequest, Ajax using XML and XMLHttpRequest, Ajax using XSLT, reusing

code, exploiting Ruby on Rails and making best use of the essential cross-browser HTML DOM.

TK5105   0-7695-2579-2
Automated software engineering; proceedings.
International Conference on Automated Software Engineering (21st: 2006: Tokyo, Japan)
Computer Society Press, ©2006 380 p. $207.00 (pa)
The 121 papers in this proceedings volume were collected for the 21st IEEE International Conference on Automated Software Engineering, held in Tokyo in September 2006. The contributors discuss the automation of the software development process with attention to themes such as verifying specifications with proof scores, modeling and synthesis, testing, mining software repositories and using communicative acts in interaction design specifications. Also addressed are ideas regarding architecture, impact analysis, and management. The majority of the contributions are full papers; 17 short papers and some that summarize tool demonstrations and mini-tutorials are also included. This book contains an author index only.

TK5105   0-321-39235-3
Communicating design; developing web site documentation for design and planning.
Brown, Daniel M.
Peachpit Press, Inc., ©2007   352 p. $39.99 (pa)
It's up to the designer to not only do it right but also to let the client see what's being done, and to capture ideas, track progress, and make sure everyone is singing from the same page. Consultant Brown describes the ten basic deliverables as belonging to three basic types, thereby making it much easier to sort out who gets what and when. He works in layers with user needs documents (personas, usability test plans and usability reports), strategy documents (competitive analyses, concept models, and content inventory) and finally with design documents (site maps, flow charts, wire frames and screen designs) on top. The logic of Brown's ideas works well at a practical as well as theoretical basis, because he shows why user needs and strategy documents come first, before planners start playing with all the cool software.

TK5105   978-0-7695-2654-6
High-performance interconnects; proceedings.
Symposium on High-Performance Interconnects (14th: 2006: Stanford, CA).
Computer Society Press, ©2006 93 p. $168.00 (pa)
Thirteen papers from the August 2006 symposium explore new and emerging technologies in wired, optical, and wireless networking, packet processing, switching, and routing. The researchers present a loosely-coupled TCP acceleration architecture, full-connectivity WDM optical interconnects with reduced complexity, an Ethernet-based virtualization technology for reconfigurable hardware platform, and a single-cycle multi-match packet classification engine using TCAMs. Other topics include network I/O acceleration in heterogeneous multicore processors, fast buffer memory with deterministic packet departures, and scheduling traffic matrices on general switch fabrics. No subject index is provided.

TK5105 2006-047271 0-8204-9940-4
Knowledge factors; how to animate members of online communities to create knowledge-relevant content.
Schmitz-Justen, Felix J.
Peter Lang Publishing Inc, ©2006 231 p. $47.95 (pa)
Schmitz-Justen, a postdoctoral researcher in collaborative knowledge management and lifelong learning, analyzes ways to optimize the sharing of knowledge in forum-based online knowledge communities. He reviews the literature on changing learning and work environments and other key concepts such as knowledge creation, capture and utilization, and proposes a model based on structural equation model analyses. He describes his empirical study, which he conducted through a univariate analysis of variance and his research methods which tested individuals' knowledge process contributions. The result is an integrated set of what had previously been fragmented research and a usable model for further research and evaluation of online knowledge communities now so prevalent in virtually every discipline of study.

TK5105 2006-006501 978-0-470-02596-3
Semantic Web technologies; trends and research in ontology-based systems.
Davies, John et al.
John Wiley & Sons, ©2006 312 p. $120.00
The Semantic Web combines the descriptive languages RDF and OWL with the data-centric language XML to provide machine-interpretable

descriptions of the content of Web documents. This work overviews key semantic knowledge technologies and research. It explains (semi-) automatic ontology generation and metadata extraction in depth, and covers ontology management and mediation. Theoretical concepts are illustrated with three case studies of industrial applications in digital libraries, the legal sector, and the telecommunication industry. The audience for the book includes graduate and advanced undergraduate students, and academic and industrial researchers.

TK5105 2006-278999 978-1-59059-514-5
SharePoint 2003 user's guide.
Bates, Seth and Tony Smith.
Apress, ©2005 340 p. $34.99 (pa)
This tutorial/reference is for all levels of SharePoint 2003 users, from beginners to advanced users. Early chapters walk through the components and capabilities that make up the SharePoint environment, with step-by-step instructions, screen shots, and examples. Later chapters cover business solutions commonly deployed through SharePoint, and offer example scenarios demonstrating the benefits of using SharePoint in specific situations, such as document collaboration and meeting management. Bates is a software architect and Smith is a product manager in the private sector.

TK5105 2006-041614 978-0-471-76814-2
Thinking on the Web; Berners-Lee, Gödel, and Turing.
Alesso, H. Peter and Craig F. Smith.
Wiley-Interscience, ©2006 261 p. $50.00
Two computer scientists with extensive internet research experience discuss the potential for an intelligent World Wide Web (also called a Semantic Web) in this book for a tech-savvy general audience as well as computer science students, scholars, and professionals. The main challenge in developing web intelligence, posit the authors, is finding a balance between greater logic expressive power and achievable computer reasoning complexity. The work and findings of Kurt Gödel, Alan Turing, and Tim Berners-Lee on machine intelligence are central to the book, which discusses both the practical and philosophical considerations related to web intelligence. A series of critical dialogues appear throughout the book, and exercises to further understanding are offered at the end of each chapter. A glossary is also provided.

TK5936 978-0-471-74109-1
Computational auditory scene analysis; principles, algorithms, and applications.
Title main entry. Ed. by DeLiang Wang and Guy J. Brown.
Wiley-Interscience, ©2006 395 p. $89.95
Auditory scene analysis is the process by which a hearer mentally separates the single wave form received by the ear into the various sounds that compounded to form it—for example into a person talking, a bird singing, and traffic; or into a violin, a trumpet, and a drum. It turns out that the process can be modeled by computer by exploiting perceptual principles. Here scientists and engineers who have done it explain the ropes to colleagues who have not, but would like to.

TK6580 2006-045743 978-0-471-73582-3
Adaptive radar signal processing.
Title main entry. Ed. by Simon Haykin.
John Wiley & Sons, ©2007 230 p. $94.95
A collaboration between Haykin (electrical and computer engineering, McMaster U.) and his co-writers over 20 years, this details the use of adaptive radar signal process to account for the fact that the nature of the environment is not to be stationary. Making good use of decades of study, Haykin examines the estimation of the angle of arrival in the presence of multipath signals, exemplified by a low-angle radar designed to track a sea-skimming missile, and the reliable detection of a small target in the presence of sea clutter. After an introduction to experimental radar facilities, contributors describe radar spectral analysis in terms of multipath signals and time-frequency analysis of sea clutter. They then discuss dynamic models with the dynamics of sea clutter and the influence of long waves on the nonstationary nature of sea clutter and two new strategies for target detection.

TK7871 2006-002545 1-57444-574-X
Organic light-emitting materials and devices.
Title main entry. Ed. by Zhigang Li and Hong Meng.
(Optical science and engineering; 110)
CRC / Taylor & Francis, ©2006 672 p. $139.95
Organic LEDs are brighter, more efficient, faster, lighter, and may even be cheaper to make someday. For the moment however, they suffer from a lack of suitable materials, short lifetimes, and technical hurdles in the mass production of devices using them. Academic and industry researchers present an overview of organic light-emitting materials, device physics, engineering, and other aspects, to help their fellow researchers overcome the difficulties.

TK7874   3-527-31264-1
Organic electronics; materials, manufacturing and applications.
Title main entry. Ed. by Hagen Klauk.
Wiley-VCH, ©2006   428 p. $165.00
Researchers from Europe, North America, and Japan survey the current landscape of organic thin-film transistors and the integrated circuits and electronic devices made with them. Reflecting the field itself, they represent both industrial and academic laboratories. Such devices, they say, may pave the way for completely new set-ups, fabrication processes, and applications. Among applications are or might be radio-frequency identification tags, single-use electronics, low-cost sensors, and flexible displays.

TK7895   2006-014790   978-0-470-02400-3
Speech recognition over digital channels; robustness and standards.
Peinado, Antonio and José C. Segura.
John Wiley & Sons, ©2006   257 p. $120.00
If you sometimes have trouble understanding what your friends are saying on their cheap cell phones, consider the trials of computer speech recognition systems, which tend to be a little sketchy in the best of conditions. Peinado and Segura (both U. of Granada, Spain) synthesize for engineers and researchers the current technologies and standards for designing and developing remote speech recognition systems. They provide some background in speech processing and communication systems, but generally assume that readers are using automated speech recognition systems and want to make them work with mobile communications technology.

MOTOR VEHICLES, AERONAUTICS, ASTRONAUTICS

TL3035   2006-046396   978-0-470-08212-6
Autonomous software-defined radio receivers for deep space applications.
Title main entry. Ed. by Jon Hamkins and Marvin K. Simon. (Deep space and navigation series)
Wiley-Interscience, ©2006   435 p. $150.00
Hamkins and Simon, both affiliated with the Jet Propulsion Laboratory at the California Institute of Technology, introduce autonomous software-defined radio (SDR) receivers and explain the design and development of algorithms for their operation. Each chapter begins with a problem statement and offers a full mathematical derivation of an appropriate solution, a decision metric or loop-structure, and performance results. Application chapters describe NASA's Electra radio, which was developed for deep space applications, and demonstrate the performance of an actual software implementation of the various algorithms working together. Although the technology described is intended for deep space applications, the theoretical development and algorithms presented can be applied to any terrestrial radio capable of processing more than one type of signal.

CHEMICAL TECHNOLOGY

TP155   2006-009280   978-0-8493-9778-3
Applied mathematical methods for chemical engineers, 2d ed.
Loney, Norman W.
CRC / Taylor & Francis, ©2007   454 p. $99.95
Loney (chemical engineering, New Jersey Institute of Technology) focuses on two important aspects of the application of mathematics to chemical engineering, namely setting up a mathematical model and verifying the model with experimental or independently derived data. Using step-by-step examples he covers differential equations, first-order ordinary differential equations, linear second-order and systems of first-order differential equations, Sturm-Liouville problems, Fourier series and integrals, partial differential equations, applications of partial differential equations in chemical engineering, dimensional analysis and scaling of boundary value problems, selected numerical methods and available software packages. Each chapter includes problems and references, and an appendix includes a numerical method of lines example using MATLAB. For this edition Loney has added information on systems of first-order differential equations and the numerical method of lines.

TP248   978-3-527-31382-2
Biological and pharmaceutical nanomaterials.
Title main entry. Ed. by Challa S.S.R. Kumar.
(Nanotechnologies for the life sciences; v.2)
Wiley-VCH, ©2006   408 p. $175.00
Biofunctionalization of Nanomaterials, the debut volume in a series covering the convergence of materials and life sciences on the nanoscale, treated the tailoring of nanomaterials to medical applications. Conversely, this collection of a dozen chapters by international scientists in the field provides in-depth reviews of nanomaterials derived from key biological and pharmacological substances. Kumar (Center of Advanced Microstructures and Devices, Louisiana State U., Baton Rouge) introduces the themes of

DNA-based nanotubes and nanoparticles; peptide- and protein- based nanomaterials; and the properties, preparation, and promise of pharmaceutical nanoparticles in gene and other therapies. Microscopic images and diagrams (some in color) illustrate material structures, experimental outcomes, intracellular pathways for gene expression, and related processes.

TP1142 2005-931631 1-58603-533-9
Plastics additives; advanced industrial analysis.
Bart, Jan C. J.
IOS Press, ©2006 808 p. $300.00
For those who examine the formulation of polymeric materials, this resource is organized for quick reference and emphasizes principles and characteristics and industrial applicability. Rather than wet chemical routes of analysis, coverage is mainly concerned with applications where such routes are not an option, as with high- molecular weight additives, grafting, incorporation in the polymer backbone, and reactive systems, or in surface analysis, microanalysis, and spatially resolved analysis. The focus is on the direct deformulation of solid polymer/additive compounds. Coverage includes solid-state spectroscopy, thermal analysis and pyrolysis, laser techniques, surface studies, and microanalysis, along with process analytics, quantitative analysis, and modern analytical method development and validation. The author is affiliated with DSM Research, The Netherlands.

MANUFACTURES, MILITARY & NAVAL SCIENCE

TS156   978-0-471-76867-8
Practical support for ISO 9001 software project documentation; using IEEE software engineering standards. (CD-ROM included)
Land, Susan K. and John W. Walz.
Wiley-Interscience, ©2006   418 p. $89.95 (pa)
Two members of the IEEE Computer Society's Standards Advisory Board explain how IEEE standards may be used to facilitate the development of processes, internal plans, and procedures in support of managed and defined software and systems engineering processes for conformance to ISO 9001. The guide walks through each section of the IEEE 12207 primary life cycle processes (software life cycle selection and development), the eight supporting life cycle processes, and the four organizational processes. The CD-ROM contains 36 document templates.

TS173 2005-057538 978-0-7680-0690-2
Accelerated testing; a practitioner's guide to accelerated and reliability testing.
Dodson, Bryan and Harry Schwab.
Soc./ Automotive Engineers, ©2006   256 p. $79.95
Featuring a wealth of real-world examples, this resource for engineers and advanced students covers the practical aspects of accelerated development and quality assurance testing. Particular attention is paid to testing in the mobility industries. Professional engineers Dodson and Schwab begin with an overview of the limitations of accelerated testing. Subsequent chapters address such topics as parameter estimation, degradation testing, and environmental stress screening. Most examples have been worked in Microsoft Excel and are included on the accompanying CD-ROM.

TS191 2006-008220 978-0-8169-0952-0
Guidelines for mechanical integrity systems. (CD-ROM included)
Title main entry. Ed. by Center for Chemical Process Safety of the American Institute of Chemical Engineers.
Wiley-Interscience, ©2006   283 p. $119.00
The Center was founded in 1985 after the chemical disasters in Mexico City, Mexico, and Bhopal, India to develop and disseminate technical information useful in preventing major accidents in the chemical and allied industries. Their major product has been a series of guidelines, this one dealing with how to design, develop, implement, and continually improve a mechanical integrity program as part of an overall process safety program. The disk contains sample documents, matrices, worksheets and other resources.

TS653   978-3-527-31532-1
Modern surface technology.
Title main entry. Ed. by Friedrich-Wilhelm Bach et al.
Trans. by C. Benjamin Nakhosteen.
Wiley-VCH, ©2006 325 p. $175.00
The demand of aerospace and high technology have greatly complicated the requirements for the surfaces of industrial components. In addition, considerations of tribological stresses, thermal conductivity and optical behavior have increased the need to turn to new coating technologies. This collection of 19 papers gives a broad and fundamental overview of coating technology, including diamond synthesis and cold gas spraying, and is designed for use by practicing materials scientists and engineers as a desk reference. It covers electing surface-treatment technologies, stainless austenitic steel, thin film technology, plastics
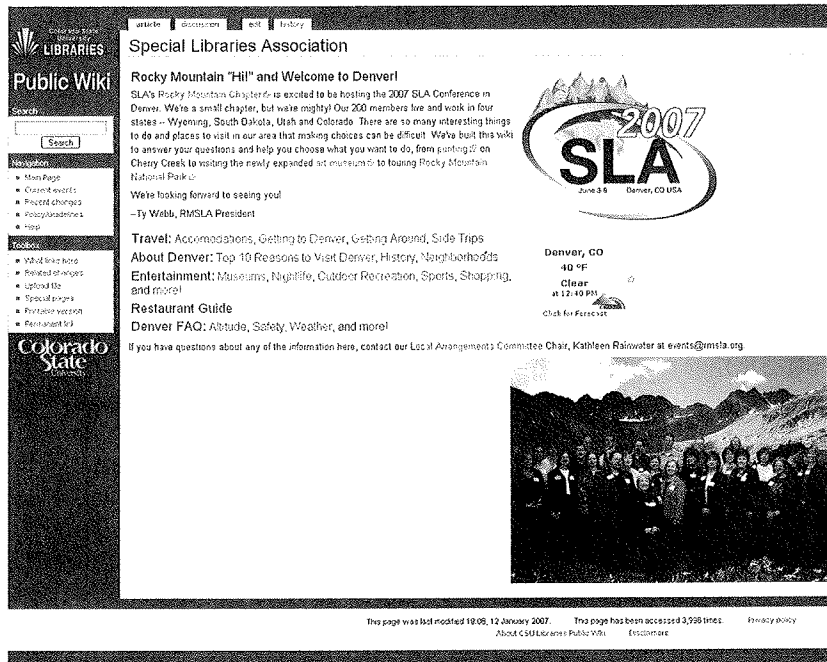
including PVD, thermal CVD hard-material coating, hot-filament CVD diamond thin films, electrodeposition and other plating processes, thermal spraying, flame and arc spraying, spray materials, high-velocity oxygen fuel flame spraying, a plasma spray system, diagnostics in thermal spraying, sol-gel and hot-dip coatings, built-up brazed-wear coatings, applications of coating processes in brazing technology, surface protection through build-up welding, and non-destructive testing and assessment of coatings.

UG1310 2006-009611 1-56347-782-3
Tactical missile design, 2d ed. (CD-ROM included)
Fleeman, Eugene L. (AIAA education series)
Am. Inst. of Aero. & Astro., ©2006   468 p. $100.95
Written for aerospace engineering university students, missile engineers, and missile program managers, this text is intended as an integrated handbook on missile design, covering technical and systems issues. The author uses simple, closed-form, analytical, physics- based equations in order to describe the primary driving parameters and also provides example calculations of rocket-powered and ramjet- powered baseline missiles, typical values of missile parameters, examples of the characteristics of current operational missiles, and discussion of the enabling subsystems and technologies of tactical missiles. The CD-ROM contains PowerPoint slides intended to aid in using the text in a short course, in addition to six tactical missile design case studies and a spreadsheet that models the configuration sizing methods used in the text. ❖

The Rocky Mountain Chapter of SLA Welcomes Us to Denver
http://lib.colostate.edu/publicwiki/index.php?title=Special_Libraries_Association